



Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife

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Coastal Swamp Amphipod

Synurella chamberlaini

State Status: **Special Concern**

Federal Status: None

Description:

The Coastal Swamp Amphipod is a laterally compressed, many segmented freshwater crustacean that looks like a small, flat shrimp. Its head has two pairs of antennae, a pair of eyes, and is fused to the first of seven thoracic segments. Each thoracic segment, as well as the six abdominal segments, has a pair of legs and/or gills that aid in respiration and locomotion. The Coastal Swamp Amphipod is orange in color with a green tinge. Mature females range in length from 8.0 to 11.5 mm and males from 4.8 to 8.5 mm (Smith 1987). Amphipods have a complex structure making identification difficult without knowledge of the morphological characters of the animal.

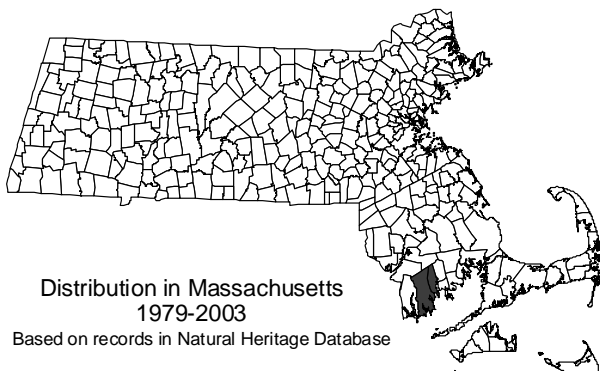
Habitat:

In Massachusetts, the Coastal Swamp Amphipod is found in heavily vegetated, low gradient, coastal wetland outlet streams of red maple and white cedar swamps in the Buzzards Bay moraine deposits (Smith 1987). This species can also be found in emergent marshes adjacent to these outlet streams. Elsewhere, the Coastal Swamp Amphipod is known from small streams, bogs, ponds, and ditches (Holsinger 1972).

Life History/Behavior:

The Coastal Swamp Amphipod has an annual life cycle. In winter and spring, reproductive females brood up to 65 eggs per clutch (Holsinger 1972). Adults are found from mid-spring to early summer and disappear by late June (mid July in Rhode Island). Juveniles are found in late summer and fall (D.G. Smith, personal communication 2003).

In general, amphipods aggregate in large numbers and remain hidden in organic debris or among beds of aquatic vegetation. All appendages are used to aid locomotion, and some specifically aid in swimming by providing a thrusting force, while others flex outward to bend the body, allowing for a sideswimming movement. It is for this reason that amphipods are given the name "sideswimmers" or scuds (Smith 2001). Amphipods react negatively to light, and so tend to be more active at night.



Distribution in Massachusetts
1979-2003

Based on records in Natural Heritage Database

Threats:

Habitat alterations such as draining, filling or destruction of coastal wetland swamps are potential threats to this species. Highway runoff is a specific threat to one of the known populations in Massachusetts.

Range:

In Massachusetts, the Coastal Swamp Amphipod is known from locations in Dartmouth and New Bedford. In New England, records exist in southeastern Maine, Rhode Island, and eastern Connecticut. Its range also extends south from Maryland to South Carolina along the Middle Atlantic Coastal Plain (Holsinger 1972).

Population Status in Massachusetts:

The status of the Coastal Swamp Amphipod populations in Massachusetts remains uncertain. This species is rarely encountered here and is listed under the Massachusetts Endangered Species Act as a Species of Special Concern. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. In addition, listed animals are specifically protected from activities that disrupt nesting, breeding, feeding, or migration. More studies on the distribution, habitat requirements, and life history of this species would help in its preservation.

Similar Species:

All amphipods are quite similar in appearance. Positive identification is difficult without knowledge of the morphological characteristics of amphipods. Identification guides sufficiently illustrate the differences among the species found in southern New England (Smith 2000). The Coastal Swamp Amphipod is often found in association with *Crangonyx* spp.

References:

- Holsinger, J. R. 1972. The freshwater amphipod crustaceans (Gammaridae) of North America. United States Environmental Protection Agency. Biota of Freshwater Ecosystems. Identification Manual 5: 1-89.
- Smith, D. G. 2001. Pennak's Freshwater Invertebrates of the United States: Porifera to Crustacea. Fourth Edition. Wiley and Sons, Inc. NY. 638 pp.
- Smith, D. G. 2000. Keys to the freshwater macroinvertebrates of southern New England. Published by author. Sunderland, MA. 243 pp.
- Smith, D. G. 1987. The genus *Synurella* in New England (Amphipoda, Crangonyctidae). *Crustaceana* 53 (3): 304-306.